## Aviation Safety

| Business Name: | | ABN: | |
|---|---|---|---|
| Business Address: | | | |
| Contact Person: | Phone: | Email: | |

### THIS RISK ASSESSMENT IS APPROVED BY THE PCBU OF THE PROJECT

Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts.

| Full Name: | | | |
|---|---|---|---|
| Signature: | | Title: | Date: |

### CLIENT OR PRINCIPAL CONTRACTOR DETAILS

| | SCOPE OF WORKS |
|---|---|
| Client: | |
| Project Name: | |
| Project Address: | |
| Project Manager: | |
| Contact Phone: | |
| Date Risk Assessment supplied to Project Manager: | |

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## RISK MATRIX

| LIKELIHOOD | INSIGNIFICANT | MINOR | MODERATE | MAJOR | CATASTROPHIC | SCORE | ACTION | HIERARCHY OF CONTROLS |
|---|---|---|---|---|---|---|---|---|
| ALMOST CERTAIN | 3 HIGH | 3 HIGH | 4 ACUTE | 4 ACUTE | 4 ACUTE | | | **Elimination** Remove the hazard. |
| LIKELY | 2 MODERATE | 3 HIGH | 3 HIGH | 4 ACUTE | 4 ACUTE | 4A ACUTE | DO NOT PROCEED | **Substitution** Replace the hazard. |
| POSSIBLE | 1 LOW | 2 MODERATE | 3 HIGH | 4 ACUTE | 4 ACUTE | 3H HIGH | Review before work starts | Isolation Isolate People from the hazard |
| UNLIKELY | 1 LOW | 1 LOW | 2 MODERATE | 3 HIGH | 4 ACUTE | 2M MODERATE | Ensure control measures in place. | **Engineering** Isolate the hazard **Administrative** Chang |
| RARE | 1 LOW | 1 LOW | 2 MODERATE | 3 HIGH | 3 HIGH | 1L LOW | Monitor and keep records. | PPE |

## Risk Rating & Required Action:

| | |
|---|---|
| **4A** | Stop work. The risk is intolerable. Eliminate the hazard or redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or higher-level authorisation is required. |
| **3H** | Review and approve additional controls before the task starts. Senior supervisor sign-off needed. |
| **2M** | Ensure all nominated controls are in place and effective. Proceed with caution; monitor conditions. |
| **1L** | Proceed, following standard operating procedures. Monitor and keep records. |

## Consequence Scale:

| Consequence | People (injury/illness) | Project / Assets | Compliance / Reputation |
|---|---|---|---|
| **Catastrophic** | Fatality or permanent total disability | project shutdown | Significant regulator intervention; criminal prosecution |
| **Major** | Serious injury/illness (hospital > 5 days) | critical delay | Improvement notice; major media coverage |
| **Moderate** | Medical-treatment injury; lost-time > 1 day | moderate delay | Minor breach; adverse client comment |
| **Minor** | First-aid only, no lost time | negligible delay | Isolated non-conformance |
| **Insignificant** | No injury | no schedule impact | Deviation caught and corrected on site |

**Notes on Hierarchy of Controls:**
Remember to apply controls in the preferred order shown by the coloured pyramid:
1. **Eliminate**
2. Substitute
3. Isolate
4. Engineering
5. Administrative
6. PPE

Always document **why** a lower-order control is accepted if elimination or substitution is not reasonably practicable.

*aligned with Safe Work Australia's* Managing the risk of fatigue at work *(2023) and ISO 45001:2018 clauses 6–8.*

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| JOB STEP | POTENTIAL HAZARDS | IR | CONTROL MEASURES | RR |
|---|---|---|---|---|
| SPECIFIC WORK STEPS | HAZARDS THAT MAY ARISE | INITIAL RISK | SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS | RESIDUAL RISK |
| 1. Aviation Safety Governance & WHS Duty of Care | • Lack of clear governance framework for aviation safety and WHS obligations under WHS Act 2011<br><br>• Board and senior leadership not adequately informed of aviation-specific safety risks<br><br>• Inadequate integration of Civil Aviation Safety Regulations (CASR) and WHS requirements<br><br>• No documented due diligence process to verify that aviation operators (fixed wing and rotary) manage WHS risks<br><br>• Inadequate consultation mechanisms with workers and contractors involved in aviation tasks<br><br>• Failure to define safety accountabilities between host PCBU, aviation provider, and client organisations | 4A | • Establish an Aviation Safety Governance Procedure aligning WHS Act 2011 duties with Civil Aviation Safety Authority (CASA) regulatory requirements<br><br>• Document a due diligence framework for Directors and Officers covering aviation operations, including regular review of safety performance, audits, and critical risk reports<br><br>• Develop formal PCBU–PCBU interface agreements clarifying responsibilities for aircraft, crew, passengers, fuel handling, ground support, and remote operations<br><br>• Implement an Aviation Safety Committee (or include aviation in existing WHS committee) with defined terms of reference, meeting at least quarterly<br><br>• Ensure consultation, cooperation and coordination processes are in place with contracted aviation operators including joint risk assessments, toolbox meetings and incident reviews<br><br>• Maintain an Aviation Safety Management System (SMS) interface document showing how the operator's SMS integrates with the organisation's WHS management system | 3H |
| 2. Aviation Safety Management System (SMS) & WHS Integration | • Aviation operator SMS not integrated with client WHS management system<br><br>• Inconsistent risk assessment methodologies between WHS and aviation safety systems<br><br>• Critical hazards (e.g. helicopter transfers, cloud seeding, de-icing, nitrogen gas rigs) not captured in a formal risk register<br><br>• Inadequate processes for hazard identification, change management, and safety reporting<br><br>• Poor learning from incidents and near misses leading to repeat events<br><br>• Safety performance indicators not aligned with high-consequence aviation risks | 4A | • Require all aviation providers to have a CASA-accepted SMS and demonstrate how it interfaces with the client WHS management system<br><br>• Standardise risk assessment criteria and consequence definitions across aviation and corporate WHS risk registers<br><br>• Develop aviation-specific critical risk registers covering helicopter transfers, fuel management, cloud seeding operations, aerial animal monitoring, plane de-icing and nitrogen gas rig activities<br><br>• Implement a formal Management of Change (MoC) procedure for new routes, bases, aircraft types, technology (e.g. nitrogen rigs), and operating environments<br><br>• Embed confidential, no-blame reporting channels for aviation hazards and near misses, integrated with the corporate WHS incident management system<br><br>• Set leading and lagging aviation safety KPIs (e.g. safety reports per flight hour, audit findings closed on time, critical control verification rates) and review them at executive level | 3H |
| 3. Contractor & Operator Selection, Assurance and Contract Management | • Engagement of aviation operators without adequate WHS and safety due diligence | 4A | • Implement a formal aviation contractor pre-qualification process including CASA certification checks, safety performance history, SMS maturity, and WHS compliance<br><br>• Include detailed safety and WHS requirements in contracts (KPIs, audit rights, reporting obligations, minimum crew competency, maintenance standards, fuel handling requirements) | 2M |

SAMPLE

| JOB STEP | POTENTIAL HAZARDS | IR | CONTROL MEASURES | RR |
|---|---|---|---|---|
| SPECIFIC WORK STEPS | HAZARDS THAT MAY ARISE | INITIAL RISK | SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS | RESIDUAL RISK |
| | • Reliance on lowest-cost provider without proper verification of safety performance<br><br>• Contracts that do not clearly allocate safety responsibilities and performance expectations<br><br>• No structured pre-qualification, auditing, or ongoing assurance of aviation contractors<br><br>• Limited oversight of subcontractors used for specialist activities (e.g. cloud seeding, de-icing, nitrogen gas rig maintenance)<br><br>• Inadequate processes to manage contract variations and scope creep affecting risk profile | | • Use a structured aviation safety evaluation tool that considers risk complexity (e.g. remote helicopter transfers, aerial animal monitoring, weather modification) when selecting operators<br><br>• Schedule regular operator audits and base inspections focusing on high-risk activities such as fuel storage and transfer, nitrogen gas systems, cloud seeding chemical management and de-icing procedures<br><br>• Require contractors to provide evidence of close-out safety findings, and include contractual leverage (e.g. performance payments, suspension clauses linked to safety performance<br><br>• Mandate notification and consultation on any subcontracting of specialised aviation tasks, with the right to approve or reject subcontractors on safety grounds | |
| 4. Flight Operations Planning & Risk Management (Including Helicopter Transfers & Cloud Seeding) | • Inadequate operational risk assessment for specific missions such as board helicopter transfers, cloud seeding and aerial animal monitoring<br><br>• Poor route and task planning in complex terrain, remote locations or low level operations<br><br>• Insufficient consideration of weather, icing risk, cloud types and turbulence for cloud seeding flights<br><br>• Overreliance on a single pilot's judgement without structured risk tools or oversight<br><br>• No formal risk thresholds or go/no-go criteria for marginal conditions or special operations<br><br>• Last-minute tasking or schedule pressure compromising planning and risk assessment quality | 4A | | 3H |
| 5. Pilot, Crew & Ground Staff Competency, Training and Fatigue Management | • Inadequate pilot and crew experience for specialised tasks such as cloud seeding, helicopter transfers to remote sites, low-level animal monitoring or de-icing operations | 4A | | 2M |

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| | • Limited training of ground staff in aircraft fuelling, nitrogen gas rig operation, and de-icing procedures<br><br>• Poor fatigue management systems for pilots, engineers and ground crews, particularly in seasonal or campaign-based work<br><br>• Insufficient competency in emergency response, ditching, winching, and passenger safety briefings<br><br>• Lack of currency in procedures for handling cloud seeding agents, cryogenic or pressurised gases and de-icing fluids<br><br>• Inconsistent verification of licences, endorsements, medicals and recurrent training | | | |
| 6. Aircraft Airworthiness, Maintenance Systems & Nitrogen Gas Rig Management | • Inadequate maintenance programs or non-compliance with required maintenance intervals<br><br>• Poor control of maintenance records, technical logs and defect reporting<br><br>• Uncontrolled use of nitrogen gas rigs for tyre inflation, oleo struts or other aircraft systems leading to over pressurisation or equipment failure<br><br>• Insufficient inspection and testing regime for nitrogen systems, hoses, regulators and storage cylinders<br><br>• Lack of clear responsibilities between operator and client for oversight of maintenance quality and airworthiness releases<br><br>• Unmanaged modifications or temporary repairs impacting airworthiness or performance | 4A | | 2M |
| 7. Fuel Management, Aircraft Refuelling & Chemical Handling | • Contaminated fuel or incorrect fuel type supplied to aircraft<br><br>• Unsafe fuelling practices including hot refuelling of helicopters, poor earthing/bonding and ignition sources | 4A | | 2M |

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| | • Inadequate systems for storage and handling of aviation fuel, cloud seeding agents, de-icing fluids and other hazardous chemicals<br><br>• Insufficient control of incompatible substances and spill response readiness<br><br>• Untrained personnel or contractors engaging in refuelling or chemical transfer operations<br><br>• Lack of oversight of mobile bowser operations at remote airstrips or helipads | | | |
| 8. Passenger Safety, Boarding & Helicopter Transfer Management | • Inadequate control of passenger movements around aircraft and helipads<br><br>• Poorly managed boarding and disembarkation for helicopter transfers especially with rotor running<br><br>• Failure to adequately brief board members and other VIP passengers who fly infrequently and may underestimate risk<br><br>• Inconsistent management of weight and balance, luggage, equipment and dangerous goods carried by passengers<br><br>• Insufficient supervision of remote or improvised landing sites used for board transfers or animal monitoring operations<br><br>• Lack of systems for managing passengers with special needs or medical conditions | 3H | | 2M |
| 9. Remote Area, Low-Level & Aerial Animal Monitoring Operations | • Low-level flight and manoeuvring hazards during aerial animal monitoring and mustering activities<br><br>• Limited emergency response capability and medical support in remote areas | 4A | | 3H |

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| | • Inadequate communication coverage leading to loss of contact with aircraft or ground teams<br><br>• Uncontrolled ground risks from rotorwash or low passes impacting workers, animals and infrastructure<br><br>• Poor coordination between pilots, animal controllers and ground personnel<br><br>• Environmental hazards such as dust, smoke, bird strike, terrain and wires | | | |
| 10. Weather, Icing, Cloud Seeding & De-Icing System Management | • Inadequate monitoring and decision-making regarding adverse weather, including icing conditions<br><br>• Improper planning and control of cloud seeding operations in marginal meteorological conditions<br><br>• Insufficient de-icing and anti-icing procedures for aircraft operating in cold or icing-prone environments<br><br>• Failure of de-icing systems or incorrect application of de-icing fluids and procedures<br><br>• Poor communication between meteorologists, flight planners and pilots for seeding missions<br><br>• Complacency during transitional seasons with rapid weather change | 4A | | 2M |
| 11. Ground Operations, Infrastructure & Helipad/Airstrip Safety | • Poorly designed or maintained helipads, airstrips and apron areas<br><br>• Inadequate control of vehicles, livestock and pedestrians in aircraft operating areas<br><br>• Insufficient lighting, markings and signage at airfields used for day/night operations<br><br>• Inadequate inspection regimes for foreign object debris (FOD), pavement condition and wildlife hazards | 3H | | 2M |

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| | • Lack of documented procedures for establishing temporary landing zones for helicopters and fixed-wing aircraft<br><br>• Unmanaged interface risks with third-party airports, pastoral leases or private strips used for operations | | | |
| 12. Emergency Preparedness, Incident Response & Recovery | • Insufficient emergency response planning for aviation accidents or serious incidents<br><br>• Lack of clarity on responsibilities between operator, client and emergency services<br><br>• Inadequate training and drills for ditching, forced landings, on-ground fires, and fuel or chemical spills<br><br>• Poor communication systems for rapid notification and coordination of responses, especially in remote operations<br><br>• No structured post-incident recovery support and investigation processes<br><br>• Failure to incorporate lessons learned into procedures and training | 4A | | 2M |
| 13. Safety Culture, Reporting, Consultation & Assurance | • Weak safety culture with under-reporting of hazards and near misses in aviation operations<br><br>• Workers and contractors not empowered to stop unsafe aviation work (e.g. marginal weather flights, rushed helipad operations, insecure nitrogen rig use)<br><br>• Limited consultation with pilots, crew, ground staff and passengers on aviation safety issues<br><br>• Insufficient internal assurance and verification of critical aviation controls<br><br>• Normalisation of deviance where unsafe shortcuts become accepted practice over time | 3H | | 2M |

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|---|---|---|---|---|
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| | • Psychosocial risks associated with high-consequence decision making, remote work and seasonal workloads | | | |
| | | | | |
| | | | | |

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| EMERGENCY RESPONSE – CALL 000 FOR EMERGENCIES |
|---|
| Ensure to have an Emergency Management Plan in place as well as adequate numbers of trained first aid staff with easy access to fully stocked first aid kits, rescue equipment, material safety data sheets, adequate access to emergency communication equipment and fire-fighting equipment suitable for all classes of fire and ignition sources. |

| LEGISLATIVE REFERENCES |
|---|
| RELEVANT LEGISLATION AND CODES OF PRACTICE. DELETE THE LEGISLATIVE REFERENCES ANY STATE THAT ARE NOT APPLICABLE |

**Queensland & Australian Capital Territory**
Work Health and Safety Act 2011
Work Health and Safety Regulations 2011
Legislation QLD: https://www.worksafe.qld.gov.au/laws-and-compliance/work-health-and-safety-laws
Codes of Practice QLD: https://www.worksafe.qld.gov.au/laws-and-compliance/codes-of-practice
Legislation ACT: https://www.worksafe.act.gov.au/laws-and-compliance/acts-and-regulations
Codes of Practice ACT: https://www.worksafe.act.gov.au/laws-and-compliance/codes-of-practice

**New South Wales**
Work Health and Safety Act 2011
Work Health and Safety Regulations 2025
Legislation NSW: https://www.safework.nsw.gov.au/legal-obligations/legislati...
Codes of Practice NSW: https://www.safework.nsw.gov.au/resource-library/lis...odes-of-practi...

**Northern Territory**
Work Health and Safety (National Uniform Legislation) Act 2011
Work Health and Safety (National Uniform Legislation) Regulation 2011
Legislation NT: https://worksafe.nt.gov.au/laws-and-compliance/workplace-s...ty-laws
Codes of Practice NT: https://worksafe.nt.gov.au/f...d-resourc...s/codes-of-...actice

**South Australia**
Work Health and Safety Act 2012 (SA)
Work Health and Safety Regulations 2012 (SA)
Legislation for SA: https://www.safework.sa.gov.au/resources/le...lation
Codes of Practice for SA: https://www.safework.sa.gov.au/wor...aces/codes-of-practice#COPs

**Tasmania**
Work Health and Safety Act 2012
Work Health and Safety (Transitional and Consequential Provisions) Act 2012
Work Health and Safety Regulations 2012
Work Health and Safety (Transitional) Regulations 2012
Legislation for TAS: https://worksafe.tas.gov.au/topics/laws-and-compliance/acts-and-regulations
Codes of Practice for TAS: https://worksafe.tas.gov.au/topics/laws-and-compliance/codes-of-practice

Details of permits, licenses or access required by regulatory bodies (add or delete as required):

- Permits from local council
- Authorisation to commence work
- Any required documents.

**Victoria**
Occupational Health and Safety Act 2004
Occupational Health and Safety Regulations 2017
Legislation VIC: https://www...rksafe.vic.gov.au/occupational-health-and-safety-act-and-regulati...s
Codes of Practice VIC: https://www.worksafe.vic.gov.au/compliance-codes-and-codes-practice

**Western Australia**
Work Health and Safety Act 2020
Work Health and Safety Regulations 2022
Legislation Western Australia: https://www.commerce.wa.gov.au/worksafe/legislation
Codes of Practice WA: https://www.commerce.wa.gov.au/worksafe/codes-practice

**Safe Work Australia Links**
Law and Regulation (All States): https://www.safeworkaustralia.gov.au/law-and-regulation
Model Codes of Practice: https://www.safeworkaustralia.gov.au/resources-publications/model-codes-of-practice

**Model Codes of Practice**

- Managing noise and preventing hearing loss at work
- Confined spaces
- Labelling of workplace hazardous chemicals
- Managing risks of hazardous chemicals in the workplace
- Welding processes
- First aid in the workplace
- Managing the risk of falls at workplaces
- Hazardous manual tasks
- Managing the risk of falls in housing construction
- Managing electrical risks in the workplace
- Demolition work
- Excavation work
- Work health and safety consultation, cooperation and coordination
- Managing the work environment and facilities
- How to manage work health and safety risks
- Managing risks of plant in the workplace
- Construction work